Source Water Assessment Program (SWAP) Report For Hillcrest Water District

What is SWAP?

The Source Water Assessment and Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS NAME	Hillcrest Water District
PWS Address	Off Pleasant Street
City/Town	Leicester, Massachusetts
PWS ID Number	2151002
Local Contact	Frank Lyon
Phone Number	(508) 892-8484

Well Name	***Source ID#***	***Zone I (in feet)***	***IWPA (in feet)***	***Source Susceptibility***
Well #1	2151002-01G	389	2285	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

Hillcrest Water District obtains its water supply from a single groundwater source. The well for Hillcrest Water District is located off Pleasant Street in Leicester. The well has a Zone I of 389 feet and an Interim Wellhead Protection Area (IWPA) of 2285 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

The well serving the facility has chlorine added as a disinfectant. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate Activities in Zone Is;**
2. **Aboveground Storage Tanks (AST) and Underground Storage Tanks (UST);**
3. **Transportation Corridors and Stormwater Drains;**
4. **Body Shop/ Auto Repair**
5. **Lawn Care / Gardening;**
6. **Transmission Line Right-of-Way;**
7. **Very Small Quantity Generators; and**
8. **Septic Systems.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one high threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone I –** Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The Hillcrest Water District's Zone I contains a transportation corridor (Route 56), local roads, homes and parking areas. The public water supplier does not own and/or control all land encompassed by the Zone I. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Work with the local fire department to ensure that they include your Zone I and IWPA in the Emergency Response Planning for local roadways.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Fuel Storage Below Ground	No	Yes	High	Heating oil tank
Body Shop/Auto Repair	No	Yes	High	Storage, use, or improper disposal of hazardous materials
Parking lot, transportation corridor, and roads	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
Lawn Care/Gardening	No	Yes	Moderate	Fertilizer and pesticide use
Septic System	No	Yes	Moderate	See septic systems brochure in the appendix
Fuel Storage Above Ground	No	Yes	Moderate	All tanks should be on an impervious surface
Transmission Line Right-of-Way	No	Yes	Low	Pesticide use
Stormwater Catchbasin	No	Yes	Low	

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

2. **Aboveground Storage Tanks (ASTs) and Undeground Storage Tanks (USTs) –** There are tanks with fuel oil located at the residences within the IWPA. If managed improperly, ASTs and USTs can be a potential source contamination due to leaks or spills of the chemicals they store.

   Recommendations:

✓ Aboveground storage tanks in your IWPA should be located on an impermeable surface, and also contained in an area large enough to hold the complete liquid volume, should a spill occur.

✓ Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices. Any modifications to the AST and UST must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements regarding ASTs and USTs.

3. **Transportation Corridors and Storm Water Drains –** Route 20 and an access ramp are located within the IWPA of the water supply. Transportation corridors are a potential source of contamination from road salt and or accidental leaks or spills of chemicals. Storm water catch basins transport storm water from the roadway and adjacent properties to the ground. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential sources of contamination include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.

   Recommendation:

✓ Work with the Town to have to the storm water catch basins inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm runoff.

4. **Body Shop/Auto Repair-** Chemicals such as hydraulic fluid, paints and thinners are used in the auto body shop within the IWPA. Water from the auto repair shop flows into a floor drain located in the shop. The water flows through an oil-water separator and then discharges into the on-site treatment plant. Non-sanitary discharges to the on-site treatment plant are prohibited. Discharge from the floor drains MUST go to a DEP approved tight tank or the drains must be sealed

   Recommendations:

✓ Encourage the facility to use best management practices for the handling and storage of hazardous materials such as paints and thinners.

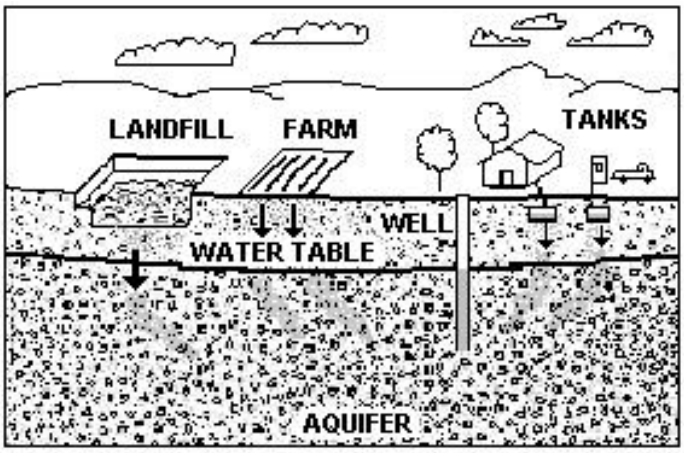

Figure 1: Example of how a well could become contaminated by different land uses and activities.

5. **Lawn Care/Gardening- -** Fertilizer is applied to the lawns located within the Zone I and IWPA. Fertilizers and pesticides, if improperly applied or stored, can be potential sources of contamination to the water supply.

   Recommendations:

✓ Never use fertilizers or pesticides in the Zone I.

✓ Use and encourage others to use best management practices when applying fertilizer or pesticide in the IWPA.

6. **Transmission Line Right-of-Way-** A transmission line right of way crosses the WPA. Over-application or improper handling of herbicides used for clearing the right-of-way is a potential source of contamination.

   Recommendation:

✓ Work with local officials during their review of the right-of-way Yearly Operating Plans to ensure that the portion of right-of-way within the IWPA is not sprayed with herbicides.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 4030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier and town boards.

7. **Very Small Quantity Generators (VSQGs) –** A few registered VSQGs are located within the IWPA of the water supply. The waste should be collected in well-labeled containers, and removed by a licensed hauler.
   Recommendation:
   ✓ Encourage Best Management Practices in the storage, handling, and disposal of hazardous chemicals to prevent leaks or spills.

8. **Septic Systems -** Septic systems are located within the IWPA. If a septic system fails or is not properly maintained it could be a potential source of microbial contamination. Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the water supply.
   Recommendations:
   ✓ Employees should be instructed on the proper disposal of spent household chemicals. Include custodial staff, groundskeepers, and certified operator.
   ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Hillcrest Water District should review and adopt the key recommendations above and the following:

Zone I:

✓ Keep non-water supply activities out of the Zone I.
✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
✓ Consider well relocation if Zone I threats cannot be mitigated.
✓ If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.

Training and Education:

✓ Train residents on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff. Post labels as appropriate on raw materials and hazardous waste.
✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/bwp/dhm/dhmpubs.

- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

Planning:

- ✓ Work with local officials in town to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet